

Does cognateness impact bilingual lexical acquisition?

Gonzalo García-Castro, Daniela Avila-Varela & Nuria Sebastian-Galles
Center for Brain and Cognition, Universitat Pompeu Fabra

gonzalo.garciadecastro@upf.edu
@gongcastro



Universitat
Pompeu Fabra
Barcelona



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Background

How does the similarity between two Translation Equivalents (i.e., **cognateness**) affect **lexical acquisition**?

Toddlers learning two languages that share a great amount of cognates show **larger vocabulary sizes** in their **non-dominant language** (language of less exposure; at 24 mo)¹

↑ **Cognates** ↑ Vocabulary size

We suggest that **cognate pairs of Translation Equivalents (TEs)** are acquired **earlier** (hypothesis 1) and **closer in time** (hypothesis 2) than non-cognate TEs, in the **non-dominant language**.

Methods

334 bilinguals aged 12 to 34 mo

- 219 Catalan-dominant, 115 Spanish-dominant
- 10-50% exposure to non-dominant language.

We collected comprehensive and productive data:

- **Lab-based checklist:** 100 items in Catalan + 100 items in Spanish
- **Online checklist:** 718 in Spanish + 718 items in Catalan (participants completed a random selection of ~245 items).

16 semantic/functional categories

(1) Are cognates acquired earlier?

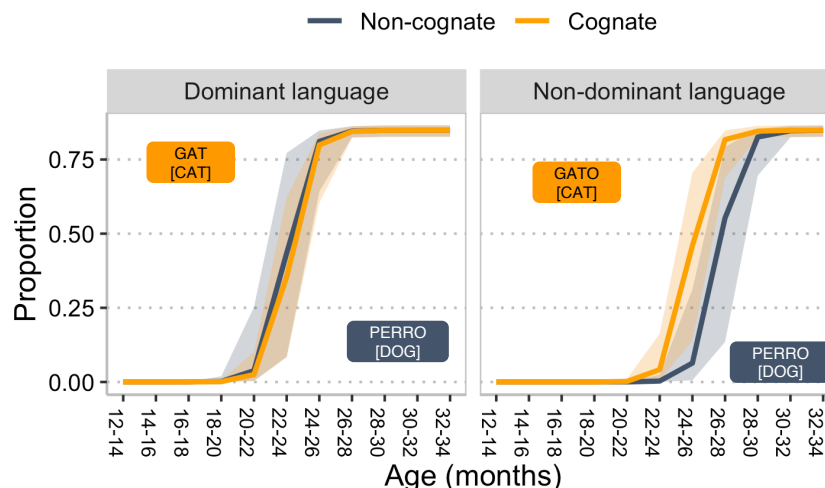
We used **logistic curves** to model the **proportion** of toddlers that were reported to understand each word.²

We defined **age of acquisition** (AoA) of each word as the age at which its acquisition curve was steepest (**Mid-point**). We estimated **mid-points** using a **Bayesian**³ model with the following predictors:

Dominance (Non-dominant/Dominant): The word belongs to the language of highest exposure

Cognateness (Non-cognate/Cognate): Phonological similarity between the forms of the TE

Posterior predictive checks: What does our model predict?



Lines represent the median of the marginal posterior distribution of fitted values. Shaded areas represent 95% credible intervals.

This model fitted the data **moderately better** than a model not including *Cognateness* ($ELPD_{diff} = -14.4$, $SE_{diff} = 3.2$)

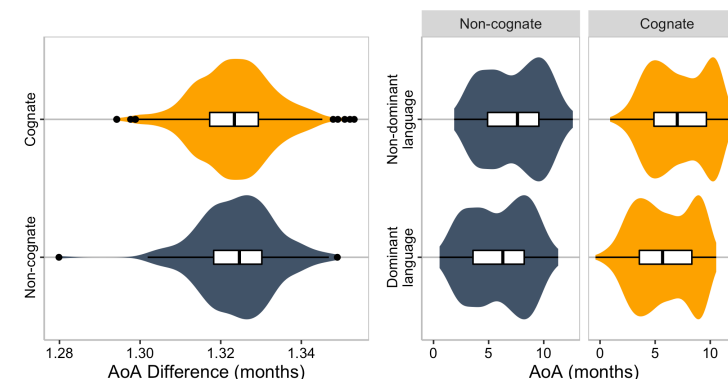
(2) Are cognate TEs acquired closer in time?

We calculated the **difference in months** between the **mid-points** of each Translation Equivalent (TE):

$$AoA_{diff} = \text{Mid-point}_{\text{Dominant}} - \text{Mid-point}_{\text{Non-dominant}}$$

Bayesian ANOVA: Moderate support for H0 absence of cognateness effect ($BF: 0.13$)

Difference in Age of Acquisition (AoA) across Translation Equivalents (TEs)



Conclusions

We present preliminary data on **comprehensive vocabulary**. Data collection is **ongoing**: some age groups need more participants. We found:

(1) **Moderate** but **inconclusive** evidence that cognates are acquired earlier than non-cognates in the **non-dominant language**.

(2) **Moderate** evidence **against** cognate TEs being acquired closer in time than non-cognates.

Future steps involve introducing **non-dichotomous** measures of **bilingualism** (balance of exposure between languages), and **cognateness** (phonological similarity between TEs).

REFERENCES: [1] Floccia et al. (2018), [2] Mahr (2020), [3] Bürkner (2017), [4] Frank et al. (2017), [5] Cuetos et al. (2011), [6] Boada et al. (2019)